

National Bureau of Standards

Certificate of Analysis

Standard Reference Material 126c

High-Nickel Steel (36% Ni)

This material is available in chip form primarily for use in checking chemical methods of analysis. A companion material, SRM 1158, is available in solid form for application in optical emission and x-ray spectrometric methods of analysis.

Analyst	C	Mn	P	S	Si	Cu	Ni	Cr	V	Mo	Co
	Combustion-Chromatographic	Persulfate-Arsenite	Photometric	Combustion-Iodate Titration	Perchloric Acid dehydration		Gravimetric			Photometric	
1	0.026	^a 0.465	—	^b 0.007	^c 0.194	—	^d 36.04	—	—	—	—
2	.025	^e .470	^f 0.003	^g .005	.192	^e 0.040	^h 36.09	^e 0.065	ⁱ 0.001	0.012	^e 0.008
3	.026	.473	^f .004	^j .004	.193	^k .04	^l 36.06	^m .06	ⁿ .001	.012	^e .009
4	.025	^o .46	.003	.004	^c .191	^p .038	36.05	^m .057	^q .001	.010	^r .006
5	.025	^o .474	.004	.005	^c .198	^e .039 ^s .042	36.03	^t .068	—	.010	^e .009
Average	0.025	0.468	0.004	0.005	0.194	0.040	36.05	0.062	0.001	0.011	0.008

^a Potentiometric titration

^b 1-g sample burned in oxygen at 1450 °C and sulfur dioxide absorbed in starch-iodide solution. Iodine is liberated from iodide by titration, during the combustion, with standard KIO₃ solution.

^c Double dehydration with intervening filtration.

^d 0.25-g sample and double precipitation. Precipitate dried at 150 °C.

^e Atomic absorption.

^f Ammonium phosphovanadate photometric method.

^g Combustion-spectrophotometric using parosanalinc.

^h Finished by electrolysis.

ⁱ Mercury cathode separation-3,3'-diaminobenzidine hydrochloride photometric method.

^j 1-g sample burned in oxygen and sulfur dioxide measured by infrared detector system.

^k Diethyldithiocarbamate photometric method.

^l Dimethylglyoxime precipitate titrated with cyanide.

^m Diphenylcarbazine photometric method.

ⁿ Nitric acid oxidation, potentiometric titration with standard ferrous ammonium sulfate.

^o Periodate spectrophotometric method.

^p Neo-cuproine spectrophotometric method.

^q 3,3'-dimethylnaphthidine spectrophotometric method.

^r Ion-exchange-nitroso R spectrophotometric method.

^s 2-2' biquinoline spectrophotometric method.

^t Persulfate oxidation, potentiometric titration with standard ferrous ammonium sulfate solution.

List of Analysts

1. E. R. Deardorff, S. A. Wicks and R. K. Bell, Analytical Chemistry Division, Institute for Materials Research, National Bureau of Standards.
2. R. B. Friconi and M. A. McMahon, Allegheny Ludlum Industries, Inc. Research Center, Brackenridge, Pennsylvania.
3. R. C. Host and J. Kosek, Universal-Cyclops Specialty Steel Division, Bridgeville, Pennsylvania.
4. F. P. Byrne, H. Silva and K. W. Guardipee, Westinghouse Electric Corporation, Research and Development Center, Pittsburgh, Pennsylvania.
5. A. L. Sloan, Carpenter Technology Corporation, Research and Development Center, Reading, Pennsylvania.

The material for this standard was prepared by the Carpenter Technology Corporation, Reading, Pennsylvania.

The overall direction and coordination of the technical measurements leading to certification were performed under the chairmanship of O. Menis and J. I. Shultz.

The technical and support aspects involved in the preparation, certification and issuance of this Standard Reference Material were coordinated through the Office of Standard Reference Materials by R. E. Michaelis.

Washington, D.C. 20234
 December 30, 1977
 (Revision of Prov. Cert.
 dated 12-6-72)

J. Paul Cali, Chief
 Office of Standard Reference Materials